

Work Order ID 121791

Wednesday, July 02, 2014 3:34:46 PM

121791

Page 1

Item ID: 647.3915

Revision ID:

Item Name: Deflector

Start Date: 7/02/14

Start Qty: 16.00

16

Required Date: 7/02/14

Req'd Qty: 16.00

16

Reference:

Approvals:

Process Plan: MLJ

Date: 14-07-03

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

NR1

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
647.3900	C

100

100

Bandsaw

Jeaspa Bandsaw

BAND SAW

Memo

Cut Blank at 29.70"

0.00

0.00

B. 14/12/19

16

φ

DAS
08
9-89

110

110

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

1-Machine per folio FB294

DWG REV: C

FOLIO REV: AA

2- deburr and break all sharp edges

0.00

0.00

16

φ

DAS
20
9-89 14-12-18

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Work Order ID 121791

Wednesday, July 02, 2014 3:34:46 PM

121791

Page 2

Item ID: 647.3915

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Deflector

Start Date: 7/02/14

Start Qty: 16.00

16

Cust Item ID:

Required Date: 7/02/14

Req'd Qty: 16.00

16

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run

Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00

120

QC

Memo

0.00

Quality Control

16

Ø

DAS

20

9-89

14-12-18

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.00

Quality Control

B-a 14/12/19

16

Ø

DAS

08

9-89

140

Outsource process-Anodize per QSI017 4.1.10.1

0.00

140

Outsource4

Memo

0.00

Outsource process - Anodize

Issue P/O to ATG :

26926

1- Black Anodize as per Dwg 647.3900

2- PRIME AS PER DWG, SEE NOTE #2

Certification of Conformity is required

CZ 15/01/06 46

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	<table style="width:100%;"> <tr> <td style="width:33%;"> Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ </td> <td style="width:33%;"> Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐ </td> <td style="width:33%;"> Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ </td> <td style="width:33%;"> Engineering ☐ Quality ☐ Other ☐ </td> </tr> </table>	Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐	Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐	Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐	Engineering ☐ Quality ☐ Other ☐
Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐	Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐	Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐	Engineering ☐ Quality ☐ Other ☐			

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Work Order ID 121791

Wednesday, July 02, 2014 3:34:46 PM

121791

Page 3

Item ID: 647.3915 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Deflector
Start Date: 7/02/14 Start Qty: 16.00 ***16*** Cust Item ID:
Required Date: 7/02/14 Req'd Qty: 16.00 ***16*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150	Receive & Inspect for Damage & Mat'l Certs	0.00							
150									
Packaging	Memo	0.00							
Packaging	Mat'l Certs req'd.								
155	QC5- Inspect part completeness to step on W/O	0.00							
155									
QC	Memo	0.00							
Quality Control									
180	Identify as per dwg & Stock Location CCK56	0.00							
180									
Packaging	Memo	0.00							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								

16x 8015-01-16

(16)

DAS
38
9-89

JAN 19 2015

DAS
26
9-89

JAN 22 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td style="width: 33%;"> Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ </td> <td style="width: 33%;"> Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐ </td> <td style="width: 33%;"> Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ </td> <td style="width: 33%;"> Engineering ☐ Quality ☐ Other ☐ </td> </tr> </table>	Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐	Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐	Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐	Engineering ☐ Quality ☐ Other ☐
Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐	Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐	Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐	Engineering ☐ Quality ☐ Other ☐			

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Work Order ID 121791

Wednesday, July 02, 2014 3:34:46 PM

121791

Page 4

Item ID: 647.3915

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Deflector

Stop ***NS2***

Start Date: 7/02/14 Start Qty: 16.00

16

Cust Item ID:

Required Date: 7/02/14 Req'd Qty: 16.00

16

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Memo

0.00

Quality Control

ML5 15-01-23

15.1-22

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
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Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Picklist Print

Wednesday, July 02, 2014 3:34:46 PM

Page 1

Work Order ID: 121791

121791

Parent Item: 647.3915

647 3915

Parent Item Name: Deflector

Start Date: 7/02/14

Required Date: 7/02/14

Start Qty: 16.00

Required Qty: 16.00

Comments: IPP REV A RQ 14/05/28 VERIFIED BY DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
647.3915E		Manufactured	No			100	Each	0.0000	1	17			DAS
647 3915F									**			14/12/14	08 9-89
Deflector													

→ M 116 642

16.0

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	<table style="width: 100%;"> <tr> <td style="width: 33%;"> Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ </td> <td style="width: 33%;"> Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐ </td> <td style="width: 33%;"> Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ </td> <td style="width: 33%;"> Engineering ☐ Quality ☐ Other ☐ </td> </tr> </table>	Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐	Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐	Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐	Engineering ☐ Quality ☐ Other ☐
Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐	Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐	Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐	Engineering ☐ Quality ☐ Other ☐			

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other _____ _____ _____ _____
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DART AEROSPACE LTD		Work Order:	121791
Description:		Part Number:	647.3915
Inspection Dwg: 647.3900 Rev: <i>C</i>		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø.192	+0.005 / -0.001	.194	✓		gauge Pins	
Ø.116	+0.004 / -0.001	.117	✓		"	
.375	+/- .005	.373	✓		SLO8	Vern
.400	+/- .005	.400	✓		"	
2.532	+/- .005	2.529	✓		Height gauge	
4.032	+/- .005	4.029	✓			
5.532	+/- .005	5.529	✓			
25.237	+/- .005	25.234	✓			
26.237	+/- .005	26.234	✓			
27.237	+/- .005	27.234	✓			
28.237	+/- .005	28.234	✓			
.340	+0.0 / -0.005	.335	✓		SLO2	Mic
R.125	+/- .005	.125	✓		Rad gauge	
.813	+/- .005	.812	✓		SLO8	
.188	+/- .005	.185	✓			
.830	+/- .005	.832	✓			
2.000	+/- .005	1.995	✓			
R.0625	+/- .005	.0625	✓		Rad gauge	

Measured by: <i>DAS 20 9-89</i> Date: 14-12-18		Audited by: <i>J. A.</i> DAS 09 9-89 Date: 14/12/19		Preliminary Approval: Date:
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Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 04250			SHEET 1 OF 3	
	DWG NO. 647.3900	REV: B	PREPARED BY J. SOTO	DATE: 11/18/2013	EFFECT ON DWG ☒ INC. ☐ UNINC.
	DWG TITLE: DEFLECTORS				
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF. NEXT ORDER	
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE	REASON: REVISED PART 647.3915 INTO ASSY 647.3903. REVISED SHEET 7 AND ADDED SHEETS 8, 9, 11, 12. ADDED NOTES 7-9. REVISED F/N 3-9 AND ADDED F/N 10-13. ADDED NOTE 7 IN ORDER TO HANG PARTS FOR FINISHING PURPOSES. FIXED NOTES ON ASSY 647.3901				ECR: 13-038, 12-026

SHEET 1, ZONE C7 WAS:

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12.
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; PRETREAT PR-148 ADHESION PROMOTER PRIME IAW MIL-P-23377J TYPE I CLASS N; 1-2 MIL MAX.
3. DEBURR AND BREAK ALL SHARP EDGES.
4. IDENTIFY IAW MPP-120.
- 5 APPLY F/N 3 AS REQUIRED TO ALL FAYING SURFACES OF F/N 6, 7 & 8 UPON ASSY.
- 6 MAXIMUM OR MINIMUM DIMENSION AFTER FINISH.

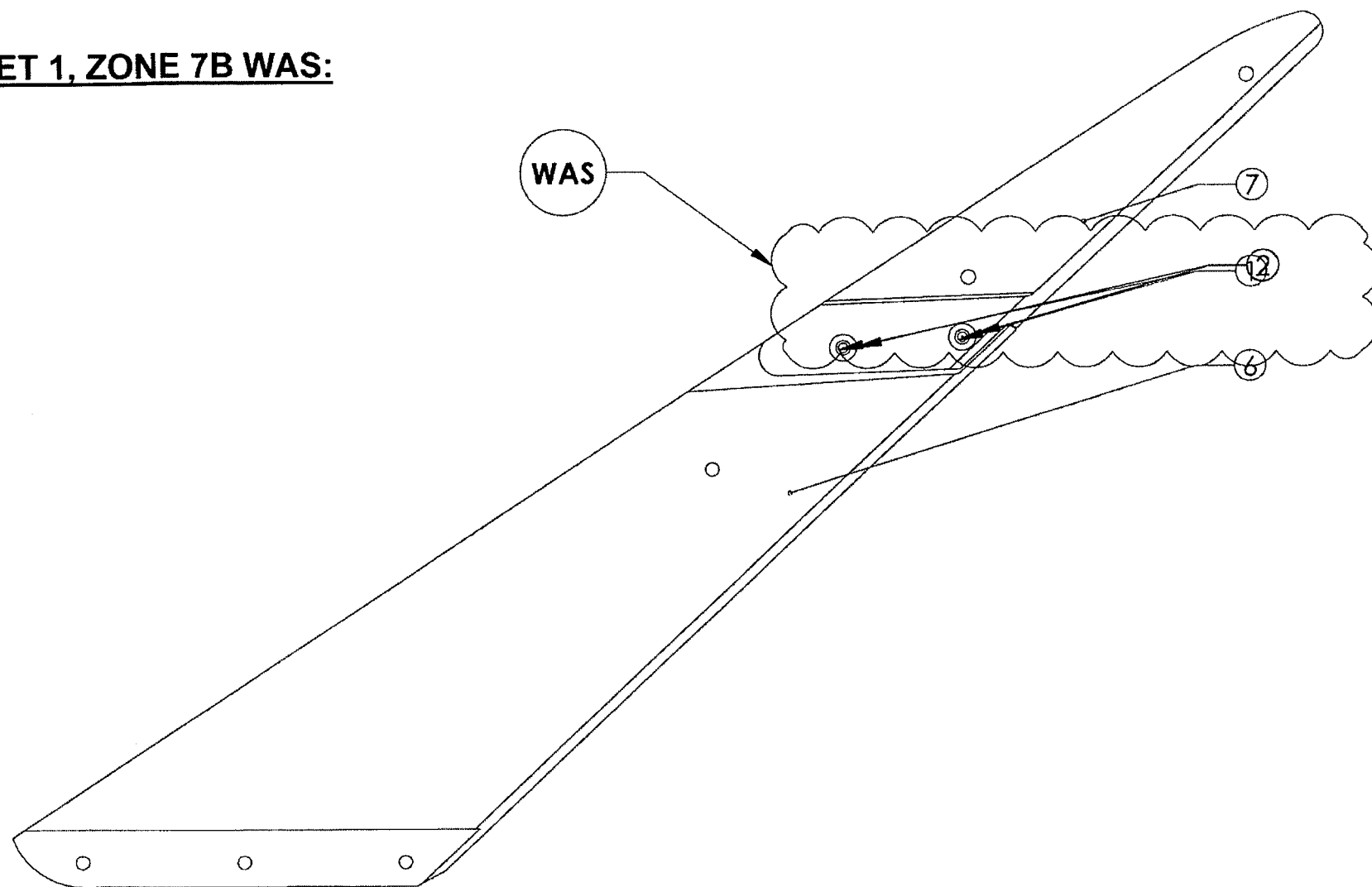
WAS

SHOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER

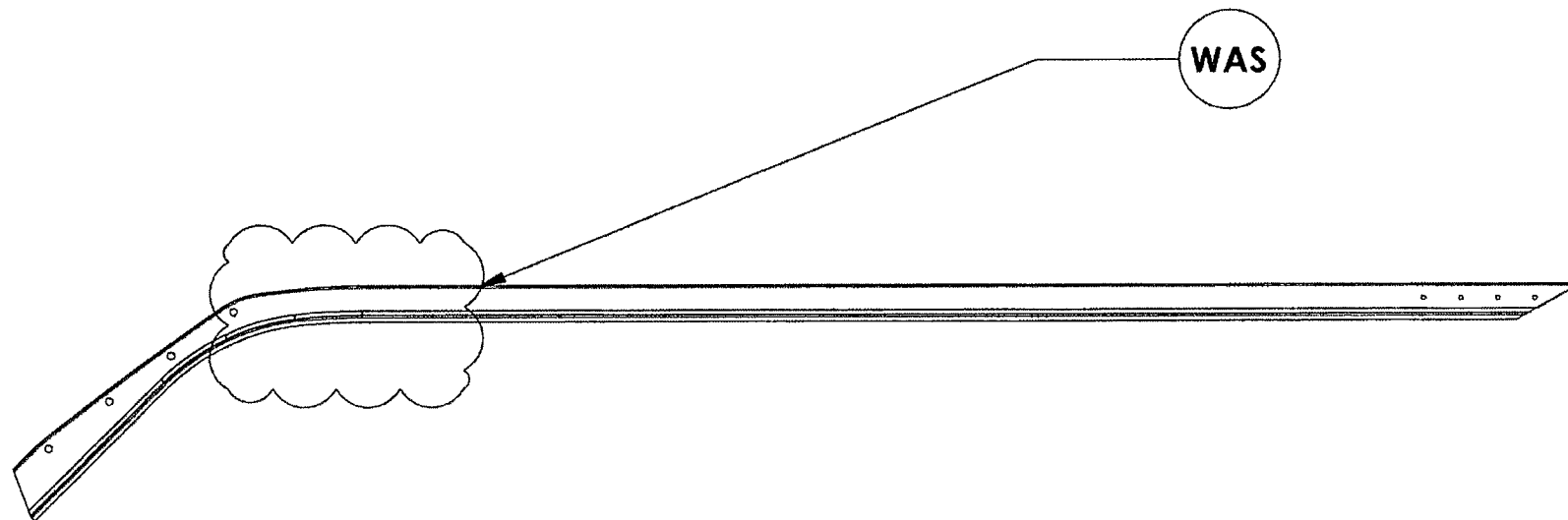
NO. 121791 MLC
 14-07-03

12	A	601.3072	6			RIVET	CR3213-6-9	
11	C	647.3917	2			DOUBLER		
10	C	647.3916	1			DEFLECTOR, UPPER HALF	△	△
9	R	647.3915	1			DEFLECTOR, LOWER HALF	△	△
8	R	647.3914		1		BREAKAWAY TIP LONG	△	△△
7	R	647.3913			1	BREAKAWAY TIP MEDIUM	△	△△
6	R	647.3912		1	1	LOWER DEFLECTOR	△	△△
5	R	647.3911				212 UPPER DEFLECTOR	△	△△
4	R	647.3910				412 UPPER DEFLECTOR	△	△△
3	R	601.2045	A/R	A/R	A/R	RTV, LOCTITE 598		△
	C	647.3903	X			DEFLECTOR ASSY		△
F/N	TC	PART NUMBER	.3903	.3902	.3901			
				QTY		DESCRIPTION	MATERIAL	SPECIFICATION

DOCUMENTS EFFECTED: ☐ MDL ☒ INSTALL INSTRUCTIONS ☒ ICA ☐ FMS ☒ BOM	CHANGE CATEGORY ☐ MAJOR ☒ MINOR	DER REVIEW REQUIRED ☐ YES ☒ NO
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SHEET 1, ZONE 7B WAS:

647.3901

SHEET 7, ZONE A6 WAS:

647.3915

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

NOTES:

1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12.

2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK;

3. DEBURR AND BREAK ALL SHARP EDGES.

4. IDENTIFY IAW MPP-120.

5 APPLY F/N 3 AS REQUIRED TO ALL FAYING SURFACES OF F/N 6, 7 & 8 UPON ASSY.

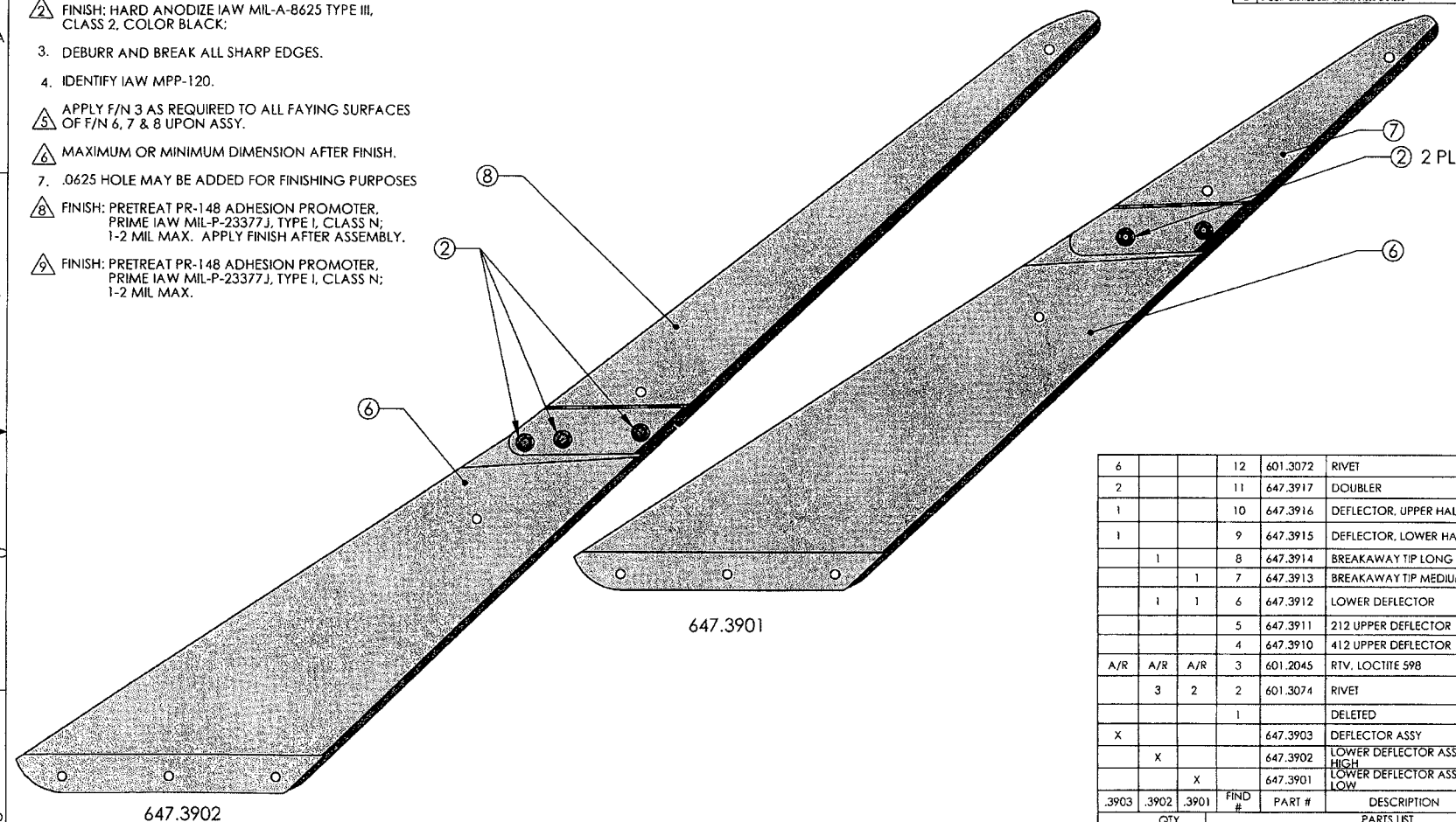
6 MAXIMUM OR MINIMUM DIMENSION AFTER FINISH.

7. .0625 HOLE MAY BE ADDED FOR FINISHING PURPOSES

8 FINISH: PRETREAT PR-148 ADHESION PROMOTER, PRIME IAW MIL-P-23377 J, TYPE I, CLASS N; 1-2 MIL MAX. APPLY FINISH AFTER ASSEMBLY.

9 FINISH: PRETREAT PR-148 ADHESION PROMOTER, PRIME IAW MIL-P-23377 J, TYPE I, CLASS N; 1-2 MIL MAX.

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	LAST PROTOTYPE RELEASE PRI		NIC
NIC	INITIAL RELEASE	09/10/09	P. BRAVO
A	INCORPORATED ECH 02064, 03339 & 03395	07/24/12	P. BRAVO
B	INCORPORATED ECH 04025	06/02/13	P. BRAVO
C	INCORPORATED ECH 04036, 04085 & 04250	11/18/13	P. BRAVO



6			12	601.3072	RIVET	CR3213-6-9	
2			11	647.3917	DOUBLER		
1			10	647.3916	DEFLECTOR, UPPER HALF	△	△
1			9	647.3915	DEFLECTOR, LOWER HALF	△	△
	1		8	647.3914	BREAKAWAY TIP LONG	△	△△
		1	7	647.3913	BREAKAWAY TIP MEDIUM	△	△△
	1	1	6	647.3912	LOWER DEFLECTOR	△	△△
			5	647.3911	212 UPPER DEFLECTOR	△	△△
			4	647.3910	412 UPPER DEFLECTOR	△	△△
A/R	A/R	A/R	3	601.2045	RTV, LOCTITE 598		△
	3	2	2	601.3074	RIVET	MS20470DAD-6-12	
			1		DELETED		
X				647.3903	DEFLECTOR ASSY		△
	X			647.3902	LOWER DEFLECTOR ASSY HIGH		
		X		647.3901	LOWER DEFLECTOR ASSY LOW		
.3903	.3902	.3901	FIND #	PART #	DESCRIPTION	MAT'L	SPEC
QTY				PARTS LIST			
NEXT ASSY (S)				ORIGINAL DATE			
647.3800				DRAWN BY			
				D. SCHUP			
				CHECKER			
				D. BRADY			
				DRAWING APPROVAL			
				P. BRAVO			
				CONTRACT NO.			
				UNLESS OTHERWISE SPECIFIED			
				DIMENSIONS ARE IN INCHES			
				TOLERANCES ARE:			
				2 PLACE DECIMALS ±.01			
				3 PLACE DECIMALS ±.003			
				ANGLES ±.2°			
				SIZE			
				B			
				CAGI CODE			
				07M/26			
				DWG. NO.			
				647.3900			
				REV.			
				C			
				SCALE			
				NONE			
				SHEET			
				1 OF 12			

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

DEFLECTORS

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.125 X 45.0° TYP

SECTION B-B

Ø.177 THRU 3PL

.266 X 17.9°

DETAIL A

DETAIL C

647.3911

15.896

C

ORIGINAL DATE
10/20/09
DRAWN BY
D. SCHUB
CHECKED BY
D. BARBER
DRAWING APPROVAL
F. BRAVO
DATE
CONTRACT NO.

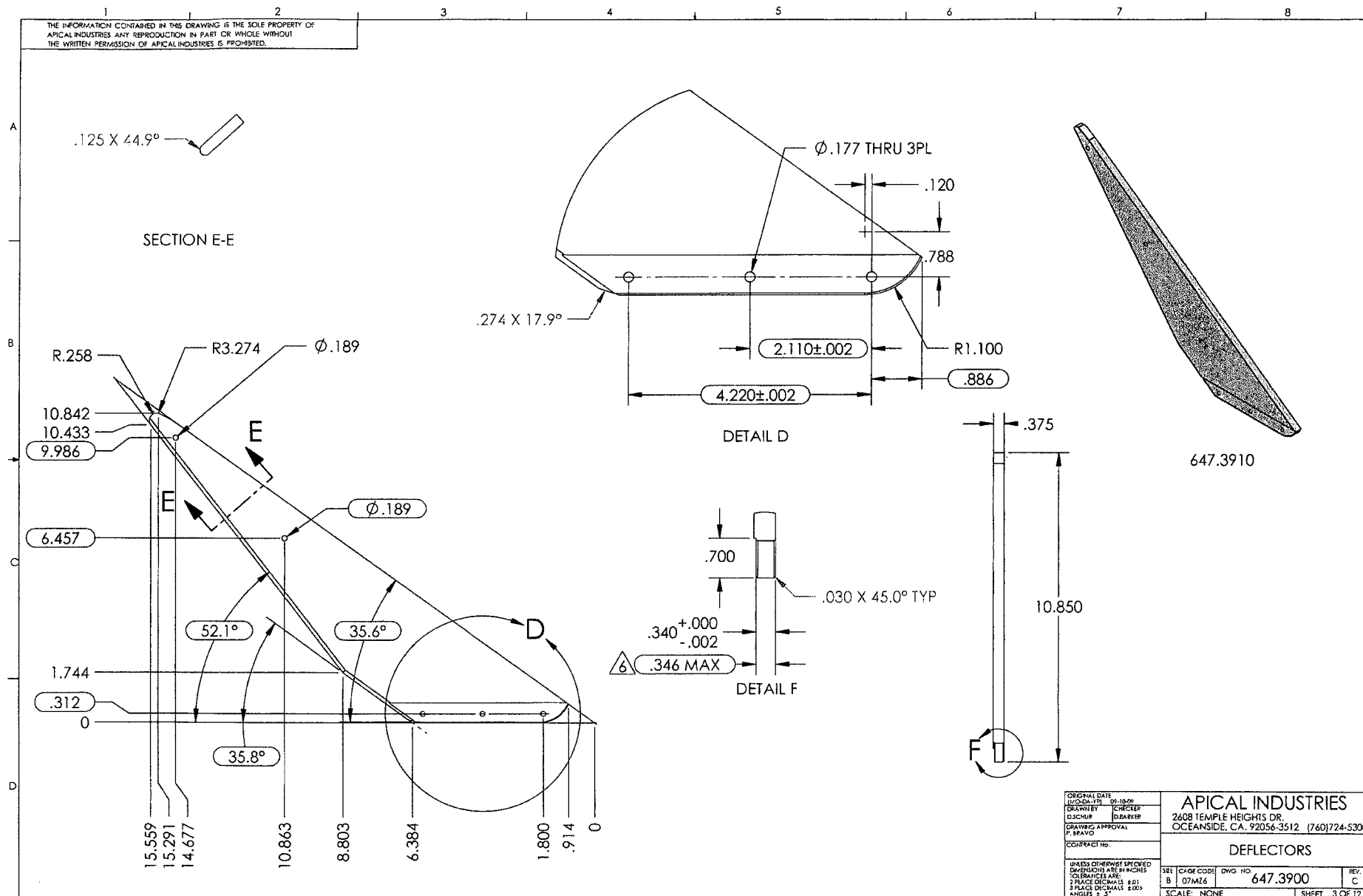
APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

DEFLECTORS

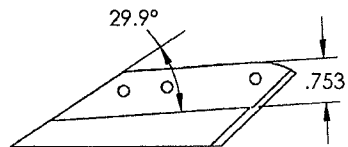
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005
ANGLES ±.5°

SHEET 2 OF 12
SCALE NONE
REV. C
DWG. NO. 647.3900
CAGE CODE B 07/12/16

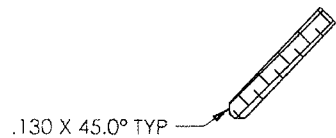
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



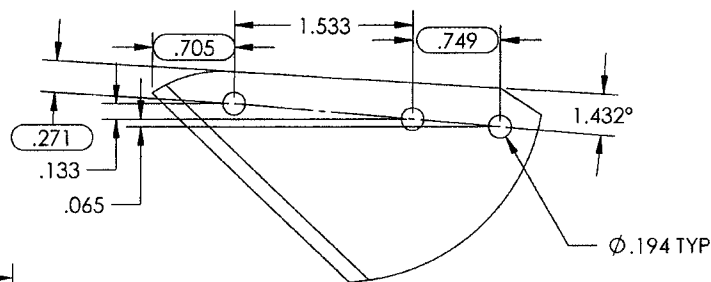
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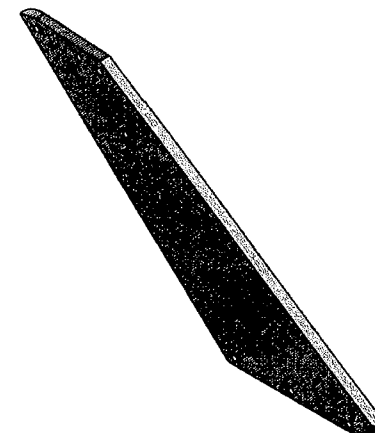
SECTION L-L



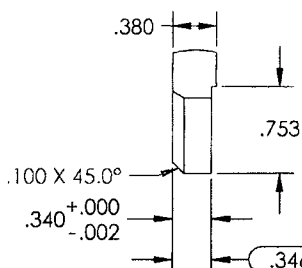
SECTION M-M



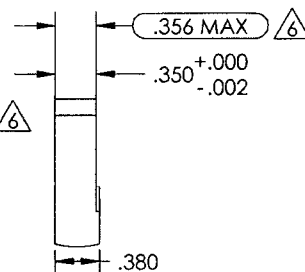
DETAIL H



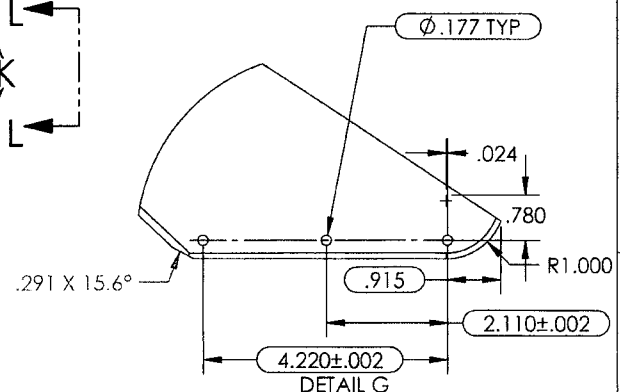
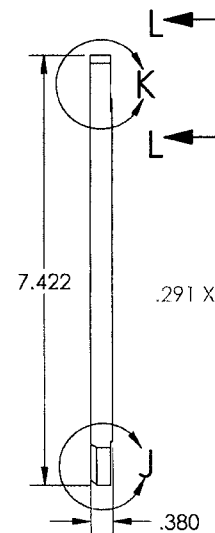
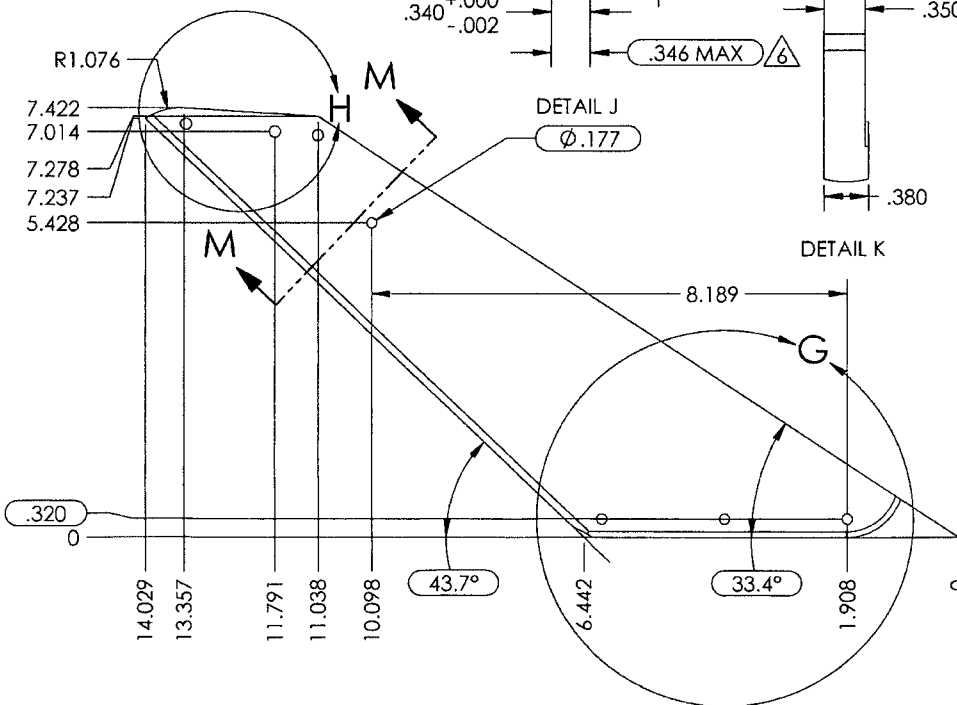
647.3912



DETAIL J



DETAIL K



DETAIL G

ORIGINAL DATE 10/24/95	09-10-99	APICAL INDUSTRIES	
DRAWN BY D.SCHUB	CHECKED D.BARTER	2608 TEMPLE HEIGHTS DR.	
DRAWING APPROVAL P. BRAVO	REV. 01	OCEANSIDE, CA. 92056-3512 (760)724-5300	
CONTRACT NO.		DEFLECTORS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DECIMALS ±.01 2 PLACE DECIMALS ±.005 ANGLES ±.5°	SEE CAGE CODE B 07M26	DWG. NO. 647.3900	REV. C
SCALE NONE		SHEET 4 OF 12	

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SECTION N-N

SECTION AD-AD

DEFLECTORS

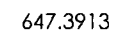
APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

ORIGINAL DATE: 01-10-09
DRAWN BY: D.SCHWAB
CHECKED BY: D.BARKER
DRAWING APPROVAL: P. BRADY
DATE: 01-10-09
CONTRACT NO.

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACES DECIMALS ±.01
3 PLACES DECIMALS ±.005
ANGLES ±.5°

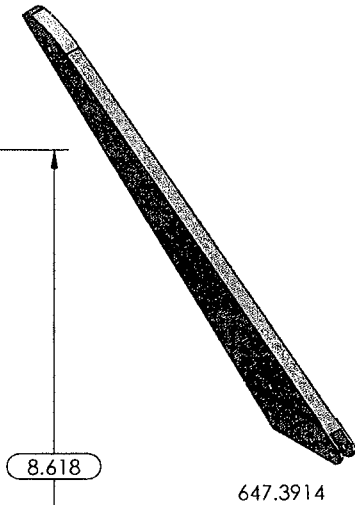
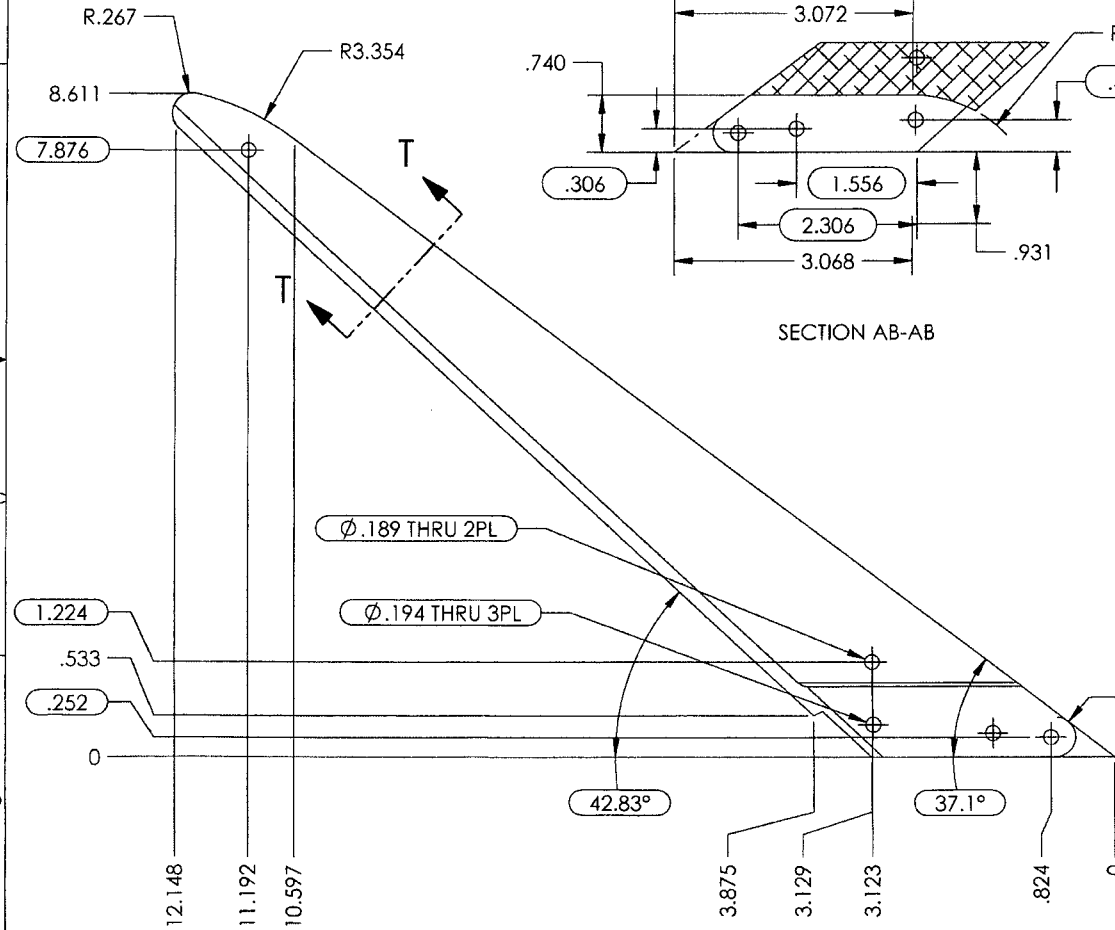
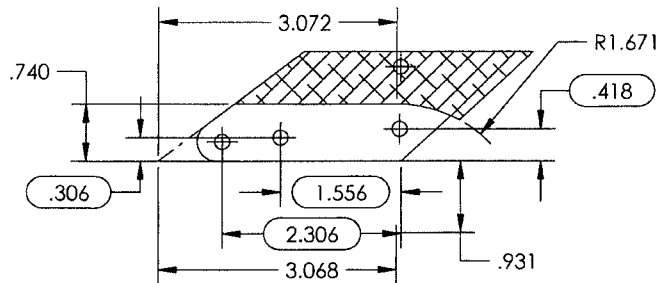
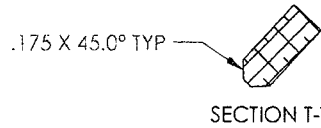
SCALE: NONE

SHEET 5 OF 12



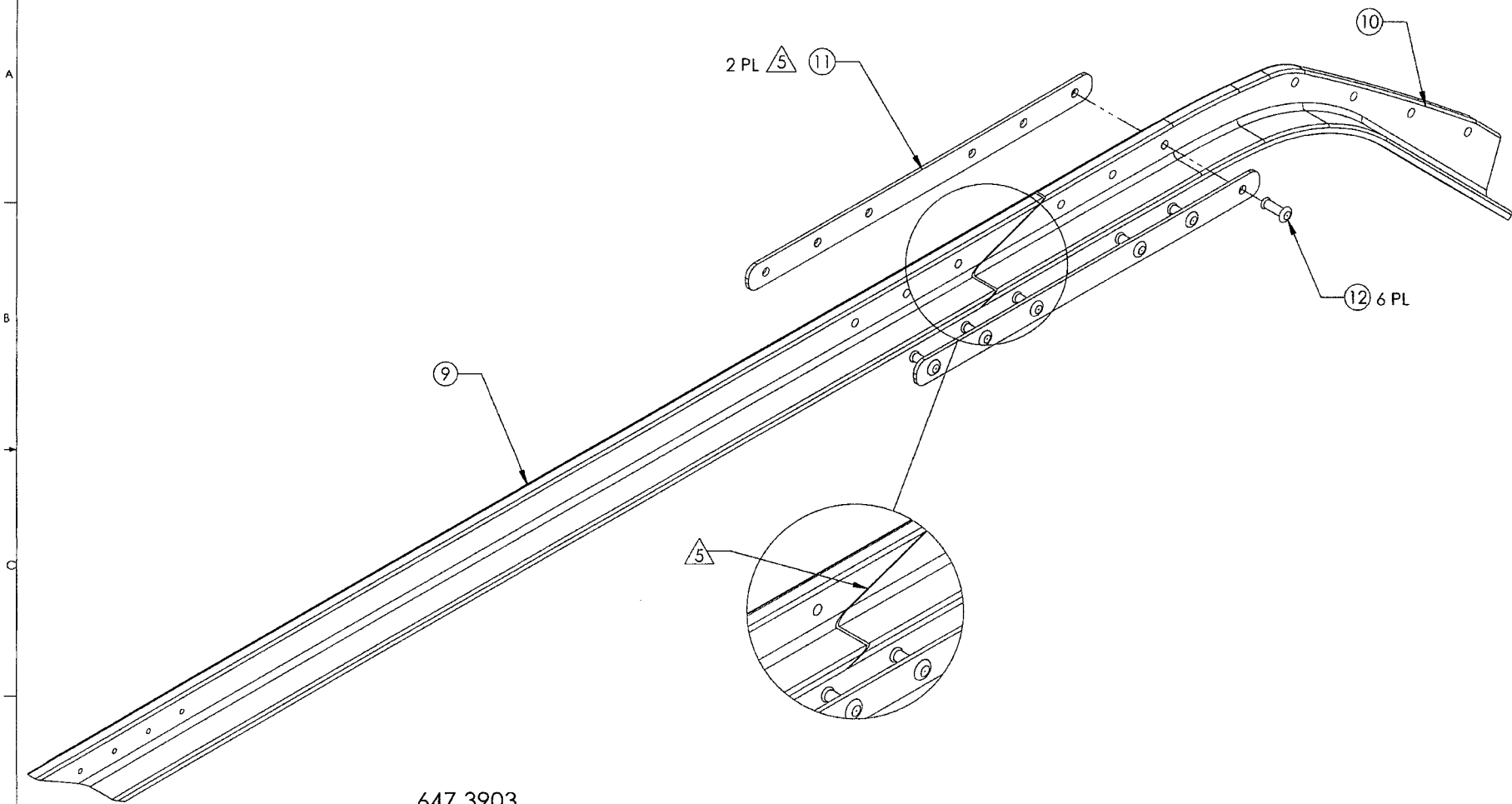
ORIGINAL DATE (MCO-DA-TS) 09-10-09	APICAL INDUSTRIES		
DRAWN BY GRECHER	2608 TEMPLE HEIGHTS DR.		
CHECKED BY SCHUR	OCEANSIDE, CA 92056-3512 (760) 724-5300		
DRAWING APPROVAL P. BRAY			
DATE 09-10-09			
CONTRACT No.			
DEFLECTORS			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1. PLACE DIMENSIONS ±.01 2. PLACE DIMENSIONS ±.005 3. PLACE DIMENSIONS ±.001			
SIZE	CAGE CODE	DWG. NO.	REV.
B	07m16	647.3900	
SCALE NONE		SHEET 5 OF 12	

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ORIGINAL DATE 06/05/06		APICAL INDUSTRIES	
DRAWN BY D. SCHUP		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY D. BARRETT		DEFLECTORS	
DRAWING APPROVAL P. BRAVO		SHEET 6 OF 12	
CONTRACT NO.		SCALE NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACES DECIMALS ±.01 2 PLACES DECIMALS ±.005 ANGLES ±.5°		REV. C	
SEE CAGE CODE	DWG. NO.	647.3900	
B 07M26			

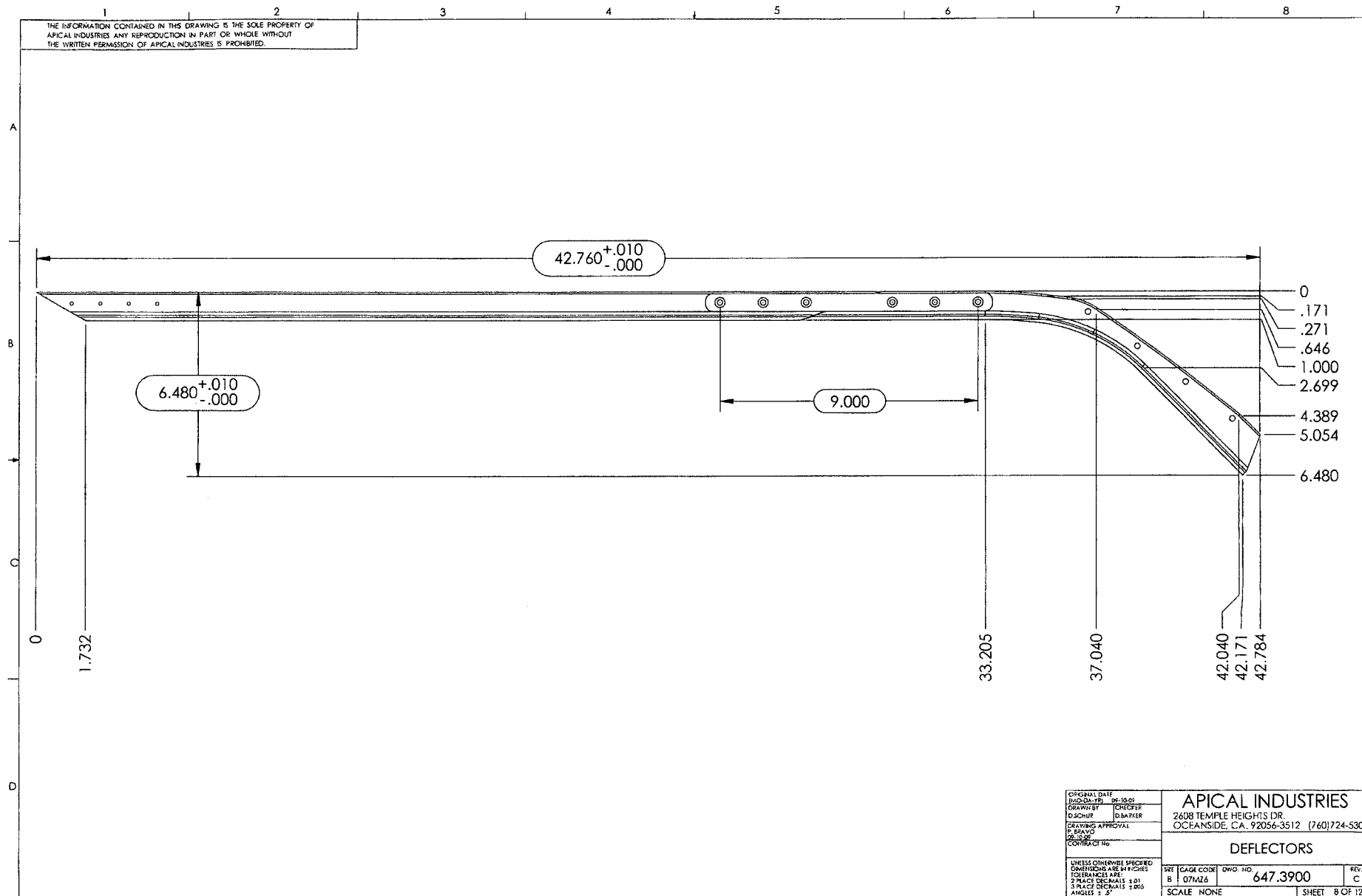
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APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT
THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



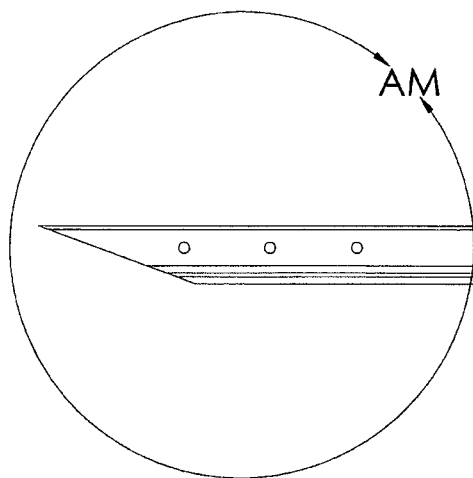
647.3903

ORIGINAL DATE JANUARY 1977		APICAL INDUSTRIES	
DRAWN BY D. J. HENRY		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY D. J. HENRY		DEFLECTORS	
DRAWING APPROVAL P. B. HENRY		REV. C	
CONTRACT NO.		SCALE NONE	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.002 ANGLES ±.5°		12E CAGE CODE B 07M26	OWG. NO. 647.3900
		SHEET 7 OF 12	

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THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



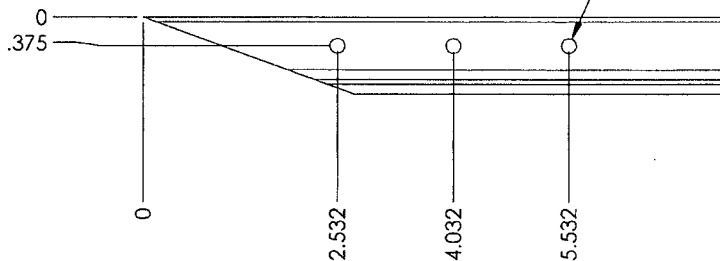
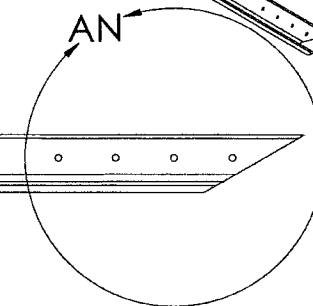
AM

AR

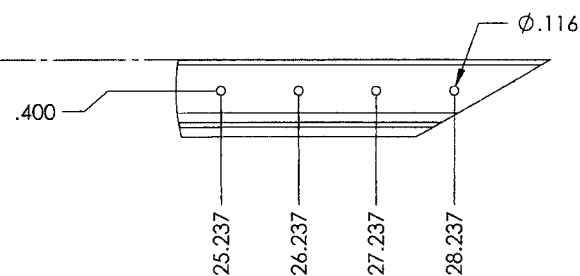
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647.3915

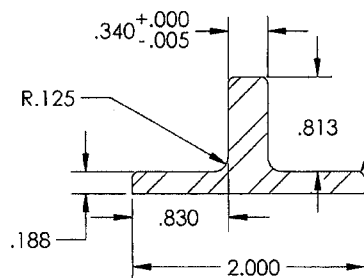
AN



DETAIL AM



DETAIL AN
R.0625 OR 45° CHAMFER X .0625
4 PL



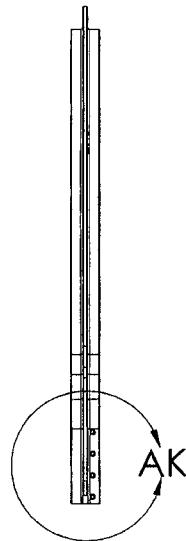
SECTION AR-AR

ORIGINAL DATE
2003-05-15
DRAWN BY
D. SCHUR
CHECKED
D. B. RIER
DRAWING APPROVAL
P. BRAVO
BRIDGE
CONTRACT NO.

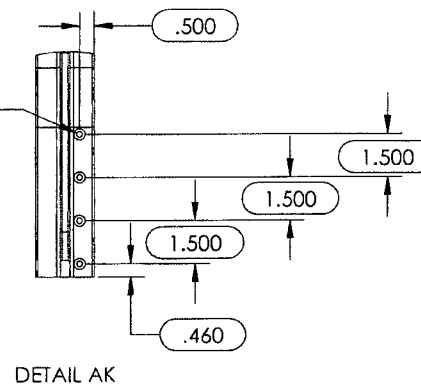
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
2 PLACE DECIMALS ±.01
3 PLACE DECIMALS ±.005
ANGLES ±.5°

APICAL INDUSTRIES			
2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300			
DEFLECTORS			
SIZE B	CAGE CODE 07MI6	DWG. NO. 647.3900	REV. C
SCALE NONE			SHEET 9 OF 12

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APICAL INDUSTRIES ANY REPRODUCTION IN PART OR WHOLE WITHOUT
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4X $\phi .196 \pm .010$ THRU ALL
✓ $\phi .385 \pm .020$ X $100^\circ \pm 1.000^\circ$

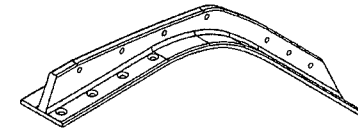


DETAIL AK

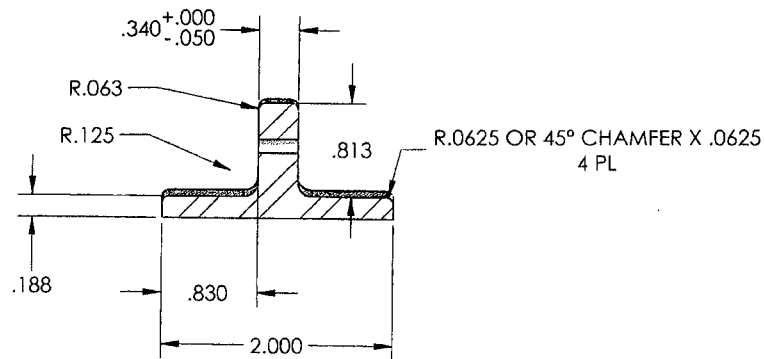
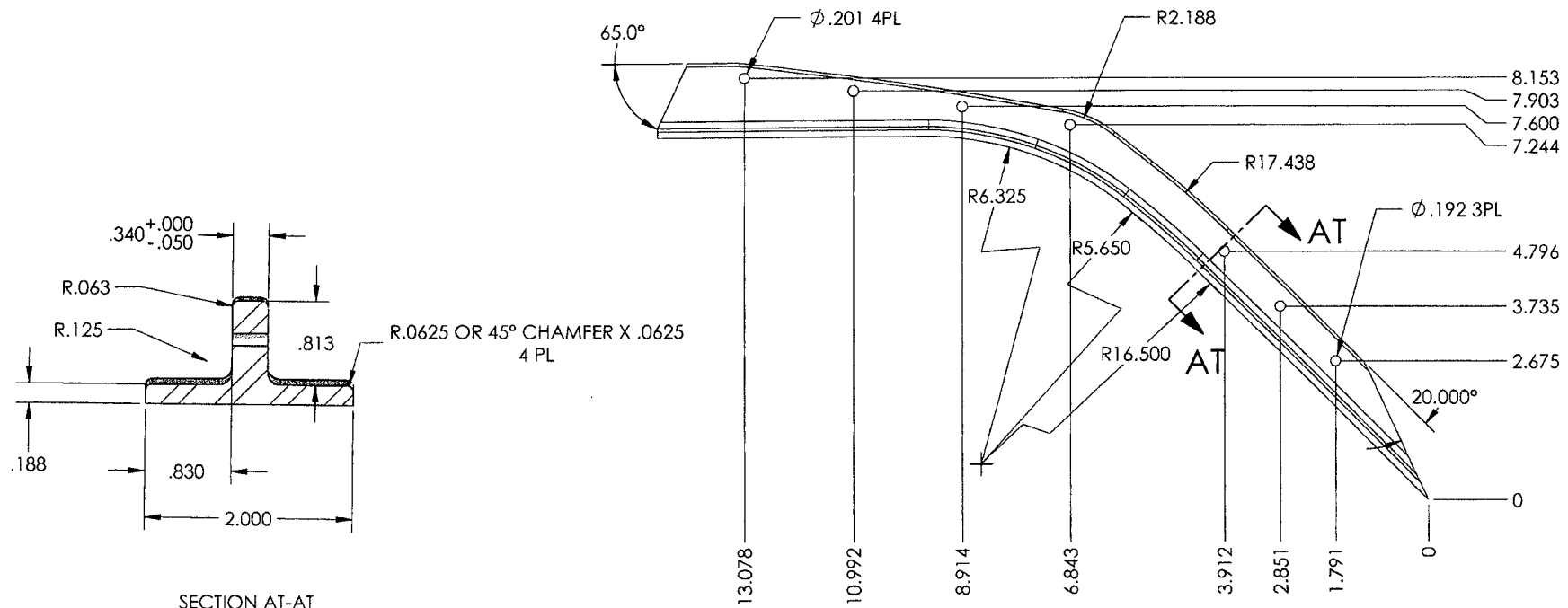
647.3915

ORIGINAL DATE 07-10-09		APICAL INDUSTRIES	
DRAWN BY DSC/HUP	CHECKED DSC/HUP	2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWING APPROVAL H. BEAVER		DEFLECTORS	
CONTRACT No.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS $\pm .01$ 3 PLACE DECIMALS $\pm .001$ ANGLES $\pm .5^\circ$		SHEET B 07M26	REV. C
SCALE NONE		DWG. NO. 647.3900	SHEET 10 OF 12

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647.3916



SECTION AT-AT

ORIGINAL DATE UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
DRAWN BY CHECKED DATE DRAWING APPROVAL P. BRAVO DATE CONTRACT NO.		DEFLECTORS	
SHEET B	CAGE CODE 07M16	DWG. NO. 647.3900	REV. C
SCALE NONE		SHEET 11 OF 12	



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO26926

Purchase Order Date 1/5/2015

PO Print Date 1/13/2015

Page Number 2 of 4

Order From :

VC-ATG001

Ship To : DART AEROSPACE LTD

A.T.G. INDUSTRIES INC.
731 INDUSTRIELLE ROAD
ROCKLAND, ON K4K 1T2
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

613-446-4544

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Ship To Contact

Ship To Phone

Ship Via:

VENDOR'S TRUCK

Ship Acct:

3	121791	647.3915 DEFLECTOR REV.C	1/16/2015	16.00	✓	\$35.00	\$560.00
---	--------	-----------------------------	-----------	-------	---	---------	----------

Yes

1/16/2015

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2
PRIME AS PER IAW MIL-P-23377J TYPE I, CLASS N

895-01-16

Line Total: \$560.00

4	127750	647.3911 UPPER DEFLECTOR REV. C	1/16/2015	6.00		\$24.50	\$147.00
---	--------	------------------------------------	-----------	------	--	---------	----------

Yes

1/16/2015

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2
PRIME AS PER IAW MIL-P-23377J TYPE I, CLASS N

Line Total: \$147.00

6	127780	647.1510 UPPER DEFLECTOR REV. A	1/16/2015	4.00		\$20.66	\$82.66
---	--------	------------------------------------	-----------	------	--	---------	---------

Yes

1/16/2015

FINISH: HARD BLACK ANODIZE AS PER IAW MIL-A-8625 TYPE III, CLASS 2
PRIME AS PER IAW MIL-P-23377J TYPE I, CLASS N

Note:

1/13/2015



A.T.G. Industries Inc.
731, rue Industrielle Rd.
PLATING DEPARTMENT
Rockland, On K4K 1T2
Canada
Ph: (613) 446-4544
Fax: (613) 446-4556

Pack List

Number: 63477

Date: 16-Jan-15

To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ship To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms		Ship Via	
Quantity	Description		
✓ 16 ea	Part: 647.3915 DEFLECTOR HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20150041 PO: PO26926	Rev: C	Sp 15-01-16 Line: 3
6 ea	Part: 647.3911 DEFLECTOR HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20150042 PO: PO26926	Rev: C	Line: 4
4 ea	Part: 647.1510 DEFLECTOR HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20150043 PO: PO26926	Rev: A	Line: 5
8 ea	Part: 647.3913 TIP HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2 PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20150044 PO: PO26926	Rev: C	Line: 6
12 ea	Part: 646.9710 BODY HARD ANODIZE AS PER MIL-A-8625 TY III, CLASS 2	Rev: C	



A.T.G. Industries Inc.
731, rue Industrielle Rd.
PLATING DEPARTMENT
Rockland, On K4K 1T2
Canada
Ph: (613) 446-4544
Fax: (613) 446-4556

Pack List

Number: 63477

Date: 16-Jan-15

To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ship To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms		Ship Via	
Quantity		Description	
	PRIME AS PER MIL-P-23377J TYPE I CLASS N PRIMER IS SUPPLY BY THE CUSTOMER Job: 20150045 PO: PO26926 Line: 7		
Certificate of Conformance			
A.T.G. Industries certifies that all items in this shipment are in conformance with all requirements, specifications and drawings referenced in the purchase order.			
ISO 9001 : 2008 REGISTERED ATG SALES-2010 TERMS APPLY			
DATE : 16/1/15			
CERTIFIED SIGNATURE : 			
RECEIVER SIGNATURE : _____			

SP15-01-16